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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY-DOCKET NO.	CONFIRMATION NO.
10/643,544	08/19/2003	Chao-Yi Yuh	B429-059	4273
26278 7590 12/10/2007 COWAN LIEBOWITZ & LATMAN, P.C JOHN J TORRENTE 1133 AVENUE OF THE AMERICAS NEW YORK, NY 10036			EXAMINER WALKER, KEITH D	
			ART UNIT	PAPER NUMBER
			1795	
			MAIL DATE	DELIVERY MODE
			12/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/643,544	Applicant(s) YUH ET AL.	
	Examiner Keith Walker	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2000.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 18,20-22,24-31 and 33-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18,20-22,24-31 and 33-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

Claims 1-17, 19, 23 & 32 are cancelled and Claims 18, 20-22, 24-31 & 33-37 are pending examination and are rejected for the reasons below.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 18, 20-22, 24-29, 31 & 33-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,372,374 (Li) in view of Japanese Publication 05-335024 (Isobe).

Li teaches a fuel cell assembly having a wet seal area defined by sealing flanges that border the active fuel cell area. A corrugated current collector abuts and is in contact with the active fuel cell area and extends into the wet seal area (Figs. 1 & 7; 3:45-67, 5:40-67). The anode and cathode elements are located in the active area. Li's teaches forming two flanges the first surface of the plate structure.

Li does not teach the use of cantilevered springs for the wet seal area.

Isobe teaches a sealing plate having sections cut out of the planer body member forming cantilevered springs. The spring sealing plate is located in the wet seal area

(Figs. 2-16; Abstract; [0012-0017, 0023]). The springs are made from stainless steel and the cantilever tab, when fully compressed, will lie in the plane of the plate (Figs. 6-8; [0029-0031]). As shown in figures 20 & 21, the rows of similar shaped tabs are offset from each other by rows of oppositely shaped tabs. Regarding claims 27 & 28, the tabs in the Isobe figures certainly point to the angle being within the range of 2 – 50 degrees. It is considered to be obvious to one skilled in the art at the time the invention was made to fabricate a spring within the instant range for the purpose of manufacturing consistency. If the angle is too large, then the spring could be bent backwards or fold on itself as the fuel cell is assembled. If the angle is too small, then the mere functionality as a spring is lost. The spring height and strength are adjusted as needed for the application ([0044]). As for the length of the sections, it is held that a modification of size in a component is an obvious matter of design choice. A shorter length sustains more force before full compression, while a longer length requires less force but has a larger range of motion. A change in size is generally recognized as being within the level of ordinary skill in the art (*In re Rose*, 105 USPQ 237). No apparent criticality is given to the instant ranges. As any of the springs are compressed the angle between the tongue and the planer body will be reduced. The use of cantilevered springs eliminates the need for high accuracy fabrication and absorbs the dimensional error better (Abstract).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the spring sheets of Li with the cantilevered

springs of Isobe to improve the sealing by using a spring that absorbs the dimensional errors better and reduces costs by reducing the need for high accuracy fabrication.

2. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,372,374 (Li) in view of Japanese Publication 05-335024 (Isobe) as applied to claim 26 above and further in view of US Patent 4,689,280 (Gionfriddo) as evidenced by Electronic Space Products International (ESPI).

The teachings of Li and Isobe as discussed above are incorporated herein.

Li and Isobe teach using stainless steel as the material for the springs but are silent to the exact composition of the super alloy.

Gionfriddo teaches using metal plates made from stainless steel or a super alloy such as Inconel (4:10-20). While the exact type of Inconel is not mentioned, it would be obvious to one skilled in the art at the time of the invention to choose an Inconel type metal such as Inconel 718, which meets the claimed composition, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice (MPEP 2144.07) based on the properties offered by the metal. Such properties include corrosion resistance and high strength, as evidenced by ESPI.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the spring material of Li with the Inconel material of Gionfriddo to improve the spring's material properties, including corrosion resistance and high strength.

***Response to Arguments***

Applicant's arguments, with respect to rejections under 35 USC 112 have been fully considered and are persuasive. The rejections have been withdrawn.

Applicant's arguments filed 9/26/07 have been fully considered but they are not persuasive. Applicant alleges the teaching combination of Li with Isobe would not lead one skilled in the art to combine the cantilevered springs with the corrugated member in the wet seal area. This argument is not persuasive since both references teach making a wet seal area with flanges and a support structure inside the wet seal area to create a sealing function for the flange. Li is silent to the sealing of this flange except for mentioning that it is important to have a seal to prevent cross-over of the gases (6:20-30). Isobe teaches placing a cantilevered spring member in the wet seal space to enhance the sealing performance of the flange (Abstract). The spring members taught by Isobe are essentially a flat component with cantilevered pieces to form springs. It would be obvious to one skilled in the art to improve the sealing performance of Li by adding the spring member of Isobe to the flanged wet seal area of Li. Applicant argues that the spring member would have to replace either the spacer element or the current collector element and that it would be obvious to replace the current collector element as oppose to the spacer element. First, the addition of the Isobe spring member does not require the removal of a component of the Li fuel cell and applicant has not provided any evidence or arguments to support this position. Second, if the addition of the spring member required the removal of a component from the Li fuel cell then since the spacer element is equivalent to a thin shim and the spring member of Isobe is a thin shim with

a spring element, it would be obvious to one skilled in the art to exchange the two components of similar size. Therefore, it would be obvious to one skilled in the art to substitute the spacer of Li with the cantilever spring member of Isobe. As such the instant claims are rendered obvious over the combined teachings of Li and Isobe.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith Walker whose telephone number is 571-272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

K. Walker

MARK RUTHKOSKY  
PRIMARY EXAMINER

 12.5.07